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CLAIMS

What is claimed is:

1. A method comprising:
 - 1 maintaining a state of a cache line indicated by a first node;
 - 2 in response to a request from a second node to access the cache line, determining
 - 3 whether the state is an ambiguous state; and
 - 4 resolving the ambiguous state.
- 1 2. The method of claim 1 wherein maintaining the state comprises maintaining a presence vector indicating whether the first node has a copy of a contents corresponding to the cache line.
- 1 3. The method of claim 2 wherein the presence vector further indicates whether the state is a Shared state or an Exclusive state.
- 1 4. The method of claim 1 wherein resolving the ambiguous state comprises snooping the first node for a current status of the cache line.
- 1 5. The method of claim 4 further comprising receiving a modified contents of the cache line.
- 1 6. The method of claim 5 further comprising updating a memory location designated for storing a contents of the cache line.
- 1 7. The method of claim 6 wherein the memory location resides on a third node.
- 1 8. The method of claim 1 further comprising completing the request.

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1 9. A method comprising:
2 maintaining a state of a cache line indicated by a first node of a plurality
3 of nodes in a shared memory system having a copy of a contents stored in
4 a memory location on a second node of the plurality of nodes;
5 in response to receiving a request from a third node of the plurality of
6 nodes to access the cache line, determining whether the state is an
7 ambiguous state; and
8 resolving the ambiguous state.

1 10. The method of claim 9 wherein maintaining the state comprises maintaining a
2 presence vector indicating whether the first node has a copy of a contents
3 corresponding to the cache line.

1 11. The method of claim 10 wherein the presence vector further indicates whether the
2 state is a Shared state or an Exclusive state.

1 12. The method of claim 9 wherein resolving the ambiguous state comprises snooping
2 the first node for a current status of the cache line.

1 13. The method of claim 12 further comprising receiving a modified contents of the
2 cache line.

1 14. The method of claim 13 further comprising updating the memory location.

1 15. The method of claim 9 further comprising completing the request.

1 16. A shared memory multiprocessor system comprising:

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2 a plurality of node controllers and a switch coupled to each of the plurality of
3 node controllers, wherein the plurality of node controllers and the switch
4 are programmed with instructions, the instructions causing the switch to:
5 maintain a state of a cache line last indicated by a first node controller of the
6 plurality of node controllers; and
7 in response to a request from a second node to access the cache line, determine
8 whether the state is an ambiguous state; and
9 resolve the ambiguous state.

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1 17. The shared memory multiprocessor system of claim 16 wherein the switch further
2 comprises a presence vector, the presence vector maintaining a status of a cache
3 line for each corresponding participating node controller of the plurality of node
4 controllers.

1 18. The shared memory multiprocessor system of claim 17 wherein the presence
2 vector further indicates if the cache line for the corresponding participating node
3 controller contains a copy of a memory.

1 19. A machine-readable medium having stored thereon data representing sequences
2 of instructions, the sequences of instructions which, when executed by a
3 processor, cause the processor to:
4 maintain a state of a cache line indicate by a first node;
5 in response to a request from a second node to access the cache line, determine
6 whether the state is an ambiguous state; and
7 resolve the ambiguous state.

1 20. The machine-readable medium of Claim 19 wherein the instructions to maintain
2 the state further comprises instructions to maintain a presence vector indicating
3 whether the first node has a copy of a contents corresponding to the cache line.

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1 21. The machine-readable medium of claim 20 wherein the presence vector further
2 indicates whether the state is a Shared state or an Exclusive state.

1 22. The machine-readable medium of claim 19 wherein the instructions to resolve the
2 ambiguous state further comprises instructions to snoop the first node for a
3 current status of the cache line.

1 23. The machine-readable medium of claim 22 further comprising instructions to
2 receive a modified contents of the cache line.

1 24. The machine-readable medium of claim 23 further comprising instructions to
2 update a memory location designated for storing a contents of the cache line.

1 25. The machine-readable medium of 24 wherein the memory location resides on a
2 third node.

1 26. The machine-readable medium of 19 further comprising instructions to complete
2 the request.

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